

## IN THE CLAIMS

1. (Previously Presented) A method for driving a diode, comprising:  
providing a power supply input voltage up to about three volts;  
selecting an amount of current from at least two amounts of current to flow through a diode based upon a voltage of at least two input values;  
directing said selected amount of current to flow through said diode; wherein at least two current sources are provided with a headroom voltage sufficient to produce said at least two amounts of current without being connected to an alternating current coupling circuit.
2. (Original) The method as claimed in claim 1, wherein said method is capable of driving a vertical cavity surface emitting laser diode.
3. (Original) The method as claimed in claim 1, wherein a first current source of said at least two current sources produces an amount of current substantially equal to one of said at least two amounts of current selected.
4. (Original) The method as claimed in claim 1, wherein said selecting one of said at least two amounts of current is accomplished by a pair of transistors operating as a differential switch.
5. (Currently Amended) A circuit for providing a semiconductor laser drive current, comprising:  
a power supply input voltage up to about three volts;  
a differential switch for selecting ~~an amount of current from one of~~ at least two amounts of current depending upon the voltage of each of at least two inputs; ~~said the~~ differential switch ~~being formed from including~~ a pair of transistors; and  
at least two current sources, one of the at least two current sources configured to generate a modulation current, another one of the at least two current sources configured to generate a current equal to the modulation current plus a bias current, said the at least two current sources being capable of producing said ~~the~~ at least two amounts of current by at least

one of independent and combined operation, wherein a headroom voltage for said the at least two current sources is obtained by the amount of voltage provided by said the input voltage less a voltage drop across a device being driven by said ~~selected~~ the one of at least two amounts of current and a voltage drop across said pair of transistors during operation of said circuit.

6. (Original) The circuit as claimed in claim 5, wherein said pair of transistors are bipolar transistors.

7. (Original) The circuit as claimed in claim 5, wherein approximately a volt of headroom voltage is obtained by the amount of voltage provided by said input voltage less a voltage drop across said device being driven by said selected current and a voltage drop across said pairs of transistors during operation of said circuit.

8. (Previously Presented) A circuit, comprising:  
at least two inputs;  
a first transistor connected to a first input of said at least two inputs;  
a second transistor connected to a second input of said at least two inputs;  
a first current source connected to said first and second transistors and configured to generate a first amount of current; and  
a second current source connected to said second transistor and configured to generate a second amount of current, wherein the second amount of current and a third amount of current substantially equal to the second amount of current less the first amount of current is configured to be delivered to a device.

9. (Previously Presented) The circuit as claimed in claim 8, wherein the second amount of current is delivered to said device when said first input is a higher voltage than said second input.

10. (Previously Presented) The circuit as claimed in claim 8, wherein said third amount of current is delivered to said device when said second input is a higher voltage than said first input.

11. (Original) The circuit as claimed in claim 8, wherein said first and second transistors are bipolar transistors.
12. (Original) The circuit as claimed in claim 8, wherein said first input is connected to a base of said first transistor.
13. (Previously Presented) The circuit as claimed in claim 8, wherein said second input is connected to a base of said second transistor.
14. (Original) The circuit as claimed in claim 8, wherein said first current source is connected to an emitter of each of said first and second transistors.
15. (Original) The circuit as claimed in claim 8, wherein said second current source is connected to a collector of said second transistor.
16. (Previously Presented) The circuit as claimed in claim 8, wherein said device is a vertical cavity surface emitting laser diode.
17. (Currently Amended) The circuit as claimed in claim 8, wherein said circuit is ~~capable of driving said~~ configured to drive the device with a voltage supply of three volts or less without alternative current coupling.
18. (Previously Presented) A circuit for providing a semiconductor laser drive current, comprising:
  - means for providing a power supply input voltage, said power supply input voltage up to about three volts;
  - means for selecting an amount of current from at least two amounts of current to flow through a diode; said selecting means being capable of analyzing the voltage of each of at least two inputs;
  - means for generating said at least two amounts of current, wherein said generating means is provided with a headroom voltage sufficient for generating said at least two amounts of current without said circuit being connected with an alternating current coupling circuit; and
  - means for directing said selected amount of current to flow through said diode.

19. (Previously Presented) The method as claimed in claim 4, wherein said pair of transistors are bipolar transistors.

20. (Previously Presented) The circuit as claimed in claim 16, wherein said vertical cavity surface emitting laser diode is connected to a collector of said second transistor.